

**VALVE TIMING CONTROLLER FOR INTERNAL-COMBUSTION ENGINE***Docket # 4754/PCT*  
*Inv.: Detlef AXMACHER d.*

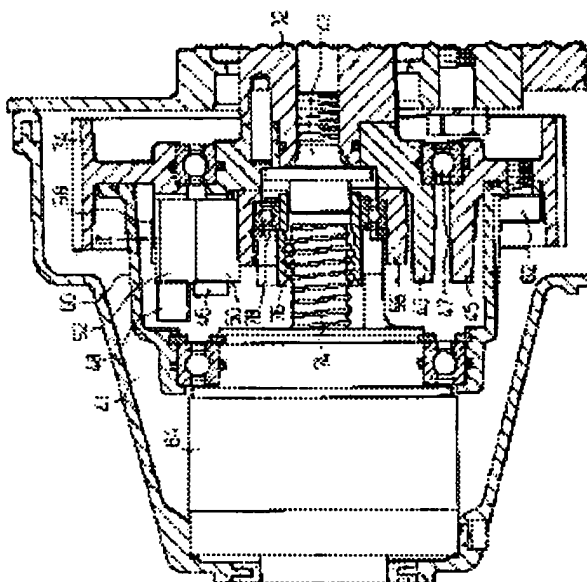
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- **International:** F01L1/34; F01L13/00  
- **European:**  
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**Abstract of JP59115412**

**PURPOSE:**In a system for varying relative phase between inner and outer sleeves through step motor, to facilitate start by controlling to lag side at start thereby lowering effective compression.  
**CONSTITUTION:**Slits 46, 48 are provided in inner sleeve 43 at cam shaft 32 side and outer sleeve 45 at timing pulley 34 side to move roller bearings 50, 60 provided in slits 46, 48 through a step motor 64 thus to control valve timing. A sensor for detecting engine temperature is provided to control the valve to lag side when starting under low temperature thus to lower effective compression while to increase cranking rotation resulting in improvement of starting performance.



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